UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF OHIO

WESTERN DIVISION

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UNITED STATES OF AMERICA,	:	CASE NO. 1:07cr60(3)
Plaintiff,	:	Cincinnati, Ohio
- v -	:	Tuesday, March 15, 2011 9:08 a.m.
PAUL H. VOLKMAN,	:	DAY 9 OF JURY TRIAL
Defendant.	:	TESTIMONY OF DR. POLICASTRO

- - -

EXCERPT OF PROCEEDINGS
BEFORE THE HONORABLE SANDRA S. BECKWITH, SENIOR JUDGE,
AND JURY

- - -

APPEARANCES:

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Proceedings reported by stenotype.
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MORNING SESSION, Tuesday, March 15, 2011

(The jury entered the courtroom at 9:08 a.m.)

THE COURT: Good morning, everybody. I think we're ready to resume.

Doctor Policastro, if you'll come up and take the witness stand again.

THE WITNESS: Yes, ma'am.

THE COURT: And you're still under oath.

THE WITNESS: Yes, ma'am.

MICHAEL POLICASTRO, M.D.

being previously duly sworn, was examined and testified further as follows:

CROSS-EXAMINATION (Cont'd)

BY MS. CROSS:

Q. Good morning, Doctor.

A. Good morning, ma'am.

Q. Yesterday we learned that accurate interpretation of the role of drug toxicity in the cause of death is dependent upon several things, but one being postmortem redistribution and site sampling, the site where the sample is taken from, correct?

A. Yes.

Q. And we learned that the rate of redistribution of drugs in the body is generally not known, right?

A. Yes.

Q. Redistribution in some drugs may occur rapidly, right?
A. Yes.
Q. And drugs that have high ratios are believed to have a greater potential for redistribution?
A. Yes.
Q. Now, I think we were getting ready to go to the Power Point, if we could have assistance.
A. I believe the last line was Mr. Gillespie's which you put up the last time.
Q. Well, we're going to go to Dwight Parsons first.
A. Okay.
Q. And looking at pages 78 through 86 --
A. Of --
Q. -- of the Power Point.
A. Oh, sorry.
Q. And with regard to Mr. Parsons, you testified -- we can look at Number 79 -- that Mr. Parsons had been a long-term patient of Doctor Volkman, correct?
A. I noted the dates, yes.
Q. Treated since April, 2003? I'm sorry, not April. What does it indicate?
A. November 11.
Q. 2003. And --
A. May I see a copy of my report, please?
Q. Yes.

THE COURT: Mr. Wright, you may.
(Mr. Wright handed document to the witness.)
THE WITNESS: Thank you.
BY MS. CROSS:
Q. So, Mr. Parsons had been -- had been treated by Doctor Volkman since November 2003, right?
A. According to the records that I received, yes.
Q. And he died August 2004?
A. Yes.
Q. That's almost a year later, right?
A. Yes.
Q. And looking at slide 83, you testified about the prescription history for Mr. Parsons. We can see from the slide that from August '03 until August '04 Mr. Parsons was on pretty much the same drug type regimen, correct?
A. He was on the same medications, but a significant change in the dosages, yes.
Q. I just asked you about the type.
A. He's on the same medications, correct.
Q. Okay. That's benzodiazepine, oxycodone and hydrocodone, correct?
A. Correct.
Q. And did we see changes in the dosage schedule, right?
A. I'm sorry?
Q. We see changes from August '03 to August '04?

A. Correct.
Q. And we see a slow progression of increases, right?
A. You see a rate of change. I don't know how you would describe a slow progression. You see a change in the dosing frequency.
Q. Okay. And that change in dosing frequency went up a couple of months and then it decreased one month, correct?
A. Well, this slide was reflective of oxycodone doses. I have to pull up, and that's what I'm reviewing right now, the exact percentages of frequency and dosing.
You see that the total oxycodone dose decreased, correct. That was just per that. But I would have to refer to my report on that month in January. Just a moment, please.
So on January 9th, '04, is what you're referring to?
Q. Yes.
A. He was on oxycodone, 5 milligrams, up to 20 tablets a day; he was on Xanax, two milligrams, QID, which is four times a day; Soma, 350 milligrams, six times a day; Norco, 10 per 325, 12 tabs per day; oxycodone, 5 milligrams, six times per day. He had not been on a month prior to that on the regimen of the oxycodone, up to 20 tablets a day at that time.
Q. So I'm not asking for the specific amount of pills. I'm just asking you to -- is the chart accurate?
A. The chart is reflective that he's taking oxycodone.
Q. And the amounts, the milligrams?

A. The milligrams. But, again, the milligrams per day is not just in isolation. It is the frequency of administration with regards to the risk for increasing overdose as regards to the frequency of the administration of those tablets.
Q. So my question first is, is that slide accurate?
A. With regards to the milligrams per day, yes.
Q. Okay. So we can see an increase in the milligrams per day for a few months and then a decrease in January '04, right?
A. Yes.
Q. And then we see an increase and then it's stable or steady from March '04 to July '04?
A. Yes.
Q. Is that accurate as we look at it ourselves on the Power Point?
A. Yes.
Q. Would you say that given this prescription history that Mr. Parsons was tolerant to oxycodone by the time, let's say, July, August '04?
A. I would state that he has tolerance to pain effects, yes. And I would say that there is a degree of tolerance to respiratory effects.
Q. Is there tolerance to the medication oxycodone?
A. There is tolerance to his pain effects, as we spoke about. There is no analgesic feeling. The definition of tolerance means that an increase in the amount of drugs are required to

maintain a certain level of pain control. It shows an accelerating dosage. So, by definition, yes, he has tolerance to the pain effects, requiring an increasing dose.
Q. Thank you. Now, we know that he died the day after his last visit with Doctor Volkman, right?
A. Correct.
Q. Look at slide 84. And that was his last prescription, correct?
A. Correct.
Q. Now, what evidence do you have in forming your conclusion that he ever took that dose or those dosages as prescribed?
A. I have no evidence.
Q. No evidence, right? There was no pill count at the time of death, right?
A. Correct.
Q. And the prescription that's listed in slide 84, which is what date?
A. 8/11/04.
Q. Did you know when you made your conclusion that Mr. Parsons had not filled the Xanax or Soma?
A. It was noted on the -- one of the medical records I reviewed, I believe it was noted that a pharmacist noted after he had died that he did not fill the Soma or Xanax. That doesn't mean that he still didn't have residual Xanax or Soma.
MS. CROSS: Your Honor, may I show the witness an

exhibit that I believe has been admitted, Government's Exhibit 43c, pages 48 and 49?

THE COURT: Yes, you may.

(Document was published.)

Q. Doctor Policastro, I am going to show you pages 48 and 49 of Government's Exhibit 43c. What is that?

A. These were the prescriptions that were in the file that I noted. And it said called Prescription Express, did not fill, per the pharmacist. And I believe that was after he died.

Q. And so as we look at this slide here, we see Xanax and Soma was prescribed on August 11th, 2004, correct?

A. Correct.

Q. But he didn't get that filled?

A. Correct. But what is noted on --

Q. I haven't asked you a question.

A. I apologize. I'm sorry.

Q. Now, we know that he would have had oxycodone in his system at the time of death, correct?

A. Correct.

Q. Because he had been on it for a year?

A. Correct.

Q. But no autopsy was performed in this case, right?

A. Not that I see, correct.

Q. No autopsy was performed in this case?

A. If it was noted on that, I'm looking through my records

right now. I don't believe so.
Q. Well, we can look at slide 80. No autopsy report is listed as a source of information, correct?
A. Yes, ma'am.
Q. If we look at slide 86, this is the toxicology report results?
A. Yes.
Q. We note that, first of all, the site sample is unknown, right?
A. Correct.
Q. And when the site sample is unknown, we've learned yesterday that you can't accurately measure the drug concentration in the body postmortem then, correct?
A. You can note a number and that number may be elevated, correct.
Q. So it may not be accurate, is my question?
A. Yes.
Q. And it could be inflated due to postmortem redistribution?
A. Yes.
Q. Right? Which oxycodone does undergo?
A. Yes.
Q. So if the number on the tox report that the well concentration of oxycodone may not be accurate, then to say that it is within a certain range is misleading, isn't it?
A. It is a notation. Is it in the range? Yes. Are there

artifacts noted with it which I noted? Yes.
Q. We can go to Aaron Gillespie, page 26 through 33 of the slide.
Now, if we turn to slide 27. We know -- isn't it true that Mr. Gillespie had been a patient of Doctor Volkman's for two months before his death.
A. Yes.
Q. He had been treated since April 2003?
A. Yes.
Q. Died in June 2003?
A. Yes.
Q. And we know he would have had oxycodone in his system because he had been taking them for two months, correct, before his death?
A. He was on combined oxycodone and oxyContin, I believe.
Q. Well, can we look at slide 29? That's a prescription history, right?
A. Correct.
Q. And it shows oxycodone being prescribed?
A. Correct. I believe he had two formulations of oxycodone.
Q. So we know he would have had oxycodone in his system at the time of death?
A. Yes, ma'am.
Q. Looking at slide 30, that's the last prescription that you indicated that Doctor Volkman prescribed for Mr. Gillespie,

slide 30, correct?
A. Yes.
Q. What evidence do you have in formulating your opinion that Mr. Gillespie actually took that prescription?
A. None.
Q. No pill count at the time of death, right?
A. Correct.
Q. You don't know if some of the pills were left or all of the pills were left, do you?
A. No.
Q. Looking at page 31 of the Power Point, you note on the autopsy -- from the autopsy report those were the findings, correct?
A. Yes, ma'am.
Q. And you say that these physical findings are consistent with drug overdose, right?
A. Yes.
Q. But isn't it true, Doctor Policastro, that those physical findings are also consistent with congestive heart failure?
A. Yes.
Q. Turn to slide 32.
Again, we have the toxicology results, right?
A. Correct.
Q. And we note that the site sample, again, is unknown for both -- for oxycodone, right?

A. Correct.
Q. And what do we know about site sampling being unknown?
A. It is unknown.
Q. And that you cannot accurately tell what the true numbers are, correct?
A. Correct.
Q. It could be significantly inflated, right?
A. Correct.
Q. Yesterday, you said you can't say if it was the oxycodone or the morphine that was the actual cause of death.
Do you remember that?
A. I said that I would not attribute any single drug associated with that, correct. Meaning that I feel that all of those were contributing factors.
Q. Okay. And did you know that Doctor Volkman did not prescribe morphine?
A. I did. And I noted it when we spoke.
Q. Is that a yes?
A. Yes.
Q. Turning to page 31 of the Power Point, this is a synopsis of the findings of the autopsy report, right?
A. Yes, ma'am.
Q. And the autopsy report showed something else that's actually not listed in the physical findings, correct?
A. I don't know what you're speaking of. There was something

else noted that's not on the slide?
Q. That's what I'm asking you.
A. I don't know. I mean, tell me what you noted that is not on the slide.
Q. Well, let me ask you this way. In the autopsy report, was it noted that the autopsy showed a purple plethora of the head and neck?
A. On the skin findings --
Q. Did you see that in the autopsy report?
A. If it is noted in the autopsy report, I reviewed it.
Q. But that's not on the slide, right?
A. Correct.
Q. And purple plethora of the head and neck is actually indicative of cardiac disease, correct?
A. Where is your source for that?
Q. I'm asking you, do you know?
A. I would not state that that plethora at the time of death is isolated for cardiac disease.
Q. Okay. I'm just asking you if the purple color around the neck and the head, isn't it consistent with cardiac disease?
A. I would state that is not only consistent -- could patients that have cardiac disease in death have plethora? Yes. Could other patients have plethora in death in purple? Yes.
Q. So your answer is yes?
A. Yes.

Q. The autopsy report also indicated that Mr. Gillespie -- I may be pronouncing it wrong, I apologize -- had severe bilateral bronchopneumonia, as well on the right side of his heart, correct?
A. Correct.
Q. And I don't see that on the slide, correct?
A. Correct.
Q. Looking at page 33. Now, you testified about your opinion about the possibility of heart death. We know that Mr. Gillespie had 60 percent obstruction, correct?
A. Correct.
Q. And 60 percent obstruction means what, in layman's terms?
A. Means 60 percent of the blood vessel is obstructed. It means that there was a narrowing of 60 percent.
Q. And that 60 percent obstruction is a lethal range, isn't it?
A. Where are you using -- where's your evidence for it is a lethal range?
Q. Well, let me ask you this. Is it?
A. 20 percent could be a lethal range, 100 percent may not be lethal. Patients have a wide spectrum of plaque lesions of their coronary disease. I see patients with coronary artery disease every single day of my practice. And multiple of those patients have 40 to 60 percent lesions that are walking around completely normal. So I would not just state that the isolated

obstructive value that you see reported is lethal by definition.
Q. Okay. Well, not lethal, but is it a serious condition?
A. Is it noted? Yes. Can it be serious? Yes. It may or may not be.
Q. Okay. Now, we know he died in a hospital, right?
A. That's what was in the report, correct.
Q. And he was there at least one or two days before his death?
A. I have no idea how long he was there. The records were not available from the time of his entry to the hospital to the time of his death.
Q. But you do know he was intubated while he was at the hospital?
A. He could have been intubated pre-hospital, it is not noted. I don't have the records available. EMS could have intubated him.
Q. Do you know that at some point he was intubated before he died?
A. Yes. Yes.
Q. And to be intubated means that a machine breathes for you, right?
A. Correct.
Q. You don't breathe on your own when you're intubated?
A. Most frequently, no.
Q. And that's very painful for the patient, right?

A. If they're awake and they sense.
Q. Is that a yes?
A. Yes.
Q. So tell us, Doctor, how is it, then, that a person can die of respiratory depression when a machine is actually doing the breathing for them.
A. Well, with regards to the findings that you mentioned with regards to the bronchopneumonia and the pulmonary edema, patients have abnormal oxygen exchange. Just because you put them on a ventilator doesn't mean that their oxygen level is going to return to normal. Patients die on ventilators all the time.
Q. So it is your testimony that if a person is intubated and receiving oxygen --
A. Can they still die?
Q. No, that's not my question. Can they die of respiratory depression, is my question.
A. They can die of respiratory air exchange abnormalities.
Q. So just trying to break it down to its elementary terms for me --
A. Mm-hmm.
Q. -- if I'm on a machine --
A. Mm-hmm.
Q. -- and it is breathing for me, right?
A. Mm-hmm.

Q. Then how is it that I can die for lack of oxygen?
A. How can you die for lack of oxygen?
Q. Yes, sir.
A. So the lungs participate in exchange between ventilation and oxygenation. Patients that have severe pulmonary edema and pneumonia cannot undergo accurate and complimentary oxygen exchange. As a result of that, they may not be oxygenating appropriately. As a result of that, as that oxygen level continues to decline, you ultimately die.
Q. Ultimately?
A. Correct. But the --
Q. Now, you said the patient had been in the hospital, right?
A. Correct.
Q. And when someone is intubated and it is painful, it is painful to the patient's body, can they be given morphine in the hospital?
A. Yes, and I noted that.
Q. Okay. So in this case, Mr. Gillespie could have been given morphine in the hospital because he was intubated, right?
A. Correct. Or he may have shot up heroin. All of those things. I mentioned that -- what is the etiology of morphine? He could have been given morphine, he could have shot up heroin. They did not test for morphine metabolites.
Q. And you haven't reviewed any hospital records to determine what was administered to him, correct?

A. Correct.
Q. We can turn to Charles Jordan, pages 34 to 44.
Doctor, we know that Mr. Jordan had been a patient for -- of Doctor Volkman's approximately seven months, if we can look at slide 35; is that right?
A. Yes, ma'am.
Q. And he was treated by Doctor Volkman from April 10th, 2003, to October 16, 2003?
A. Yes.
Q. And he died a few days later, about five days after his last visit with Doctor Volkman?
A. Correct.
Q. If you could, turn to slide 39. Looking at the prescription history, we see that he was on the same types of medication throughout the time he was being treated?
A. Yes, ma'am.
Q. Benzodiazepines and oxycodone?
A. Yes, ma'am.
Q. We see a steady, for four months, of the medication in milligrams and then an increase, correct?
A. Yes, ma'am.
Q. Looking at page 40, that was the last prescription that Doctor Volkman -- you testified that Doctor Volkman prescribed for Mr. Jordan. What evidence do you have that Mr. Jordan took this medication?

A. None.
Q. Looking at page 42, the autopsy report.
A. Yes, ma'am.
Q. This is a synopsis of your summary of the autopsy report?
A. Correct.
Q. Of what you reviewed?
A. Correct. I believe it was handed to me at a later date than the time I wrote the report, I believe.
Q. But you reviewed it?
A. Correct.
Q. And the autopsy report revealed more than 50 percent blockage of the left coronary artery and, again, purple plethora of the head and neck in this case, correct?
A. Correct.
Q. But we don't see that on the summary here?
A. I didn't have it available at the time. Well, yes, correct, it is not on the slide.
Q. And it is your testimony that the 50 percent blockage of the left coronary artery, along with purple plethora about the head and neck, is not consistent with cardiac death?
A. I did not say that. I stated that he has coronary disease. The purple plethora may or may not be reflective of a cardiac death. He has coronary disease, no scar or thrombus or clot was noted. So does he have coronary disease at the time of his death? Yes. Did he have drugs present at the time of his

death? Yes.
Q. Now, before you even reviewed the autopsy report you concluded that this was a drug overdose, didn't you?
A. The summation report that was noted noted some findings with regards to the antemortem history, which was he was found snoring loudly prior to his death. Cardiac patients don't snore loudly right before their death with sudden cardiac death.
Q. My question is: Before you reviewed the autopsy report, you concluded that this was an overdose, right?
A. Did I feel that there was evidence for --
Q. Is that a yes or no?
A. Yes.
Q. Page 43, looking at the toxicology report, again you note, Doctor, that oxycodone is drawn from the heart sample here, right?
A. Yes, ma'am.
Q. And is it true that the heart sample is the least accurate of all of the sample sites that you can take from the body?
A. In my opinion, yes.
Q. And so with the heart sample being the least accurate and given that oxycodone undergoes postmortem redistribution, moves in the body, right, this number may be inaccurate?
A. Yes.
Q. So we really can't rely on this number in the toxicology

report because it may be inflated, may not be accurate?
A. Yes.
Q. Going to Mr. Daniel Coffee, pages 45 to 53. Doctor, we note that Daniel Coffee was a patient of Doctor Volkman's, right?
A. Yes.
Q. And that he had been treated by Doctor Volkman for about what, four months?
A. Correct.
Q. If we can look at slide -- it is already up there.
From -- well, it doesn't say it up there, but did you know that he had been treated since August '03?
A. The records that I had were the records that I had. So the notations were limited to the records that I had.
Q. Well, look at slide 48. You testified from that slide yesterday.
Does that list the prescription history from August '03?
A. I believe those were -- I saw those later at that time, so, yes. So the dates that are there are accurate.
Q. Now, in looking at that prescription history, we do see an increase in the medication, right?
A. Yes.
Q. But we see generally Mr. Coffee was prescribed and taking the same combination of medications, correct?
A. Yes.

Q. Slide 49. This is the last prescription that you testified was prescribed by Doctor Volkman to Mr. Coffee?
A. Yes, ma'am.
Q. Again, what evidence do you have that the patient took those medications as prescribed?
A. None.
Q. So in rendering your opinion, you assume that he did?
A. I made the assumption he was taking his medications, yes.
Q. Page 51, the autopsy report. Yesterday you said that the findings, these physical findings, were consistent with drug-induced death?
A. Yes.
Q. Is that right?
A. Yes.
Q. When, in fact, these findings are also consistent with all sorts of deaths, correct?
A. Other deaths can have fluid in the lungs, correct.
Q. Yes. So pulmonary edema, vascular congestion and -- those can be consistent with all types of deaths, right?
A. Yes.
Q. Not just drug-induced deaths?
A. Correct.
Q. Looking at page 52, the toxicology report, again, we have what sampling site?
A. It would be unknown.

Q. Unknown. So when we see that, we know that the numbers may not be accurate, right?
A. Correct.
Q. And we know that oxycodone and hydrocodone both undergo postmortem redistribution, right?
A. Yes.
Q. So the oxycodone and hydrocodone levels are not really reliable?
A. You keep making the assumption that just because the number is there, that the presence of those drugs and their toxicity is inaccurate.
Q. Well, let me ask you this: You see the numbers, right?
A. Correct.
Q. We know it is an unknown site sampling, right?
A. Correct.
Q. Which means that the numbers could be inflated, right?
A. Correct.
Q. And we know that both of these drugs undergo postmortem redistribution, right?
A. Correct.
Q. Which means they move in the body, right?
A. Mm-hmm.
Q. So these numbers may not be accurate, that's all I'm saying.
A. Correct, the numbers may be inaccurate.

Q. Turning to Mary Catherine Carver, pages 54 through 62. If we can look at slide 55, we know that Mary Carver was a patient of Doctor Volkman's?
A. Yes.
Q. And she had been treated by him from when?
A. 9/11/03 to 1/8/04.
Q. And she died two days after the last visit?
A. Yes, ma'am.
Q. Now, if you look at page 57, we can see that the time that she was seeing Doctor Volkman she was pretty much on the same type -- same type of medications, right?
A. Yes.
Q. And we see a slowed progression of increase from October to November, right?
A. Yes.
Q. And then we don't see an increase in December?
A. Yes.
Q. And then a slow increase in January, right?
A. Yes.
Q. Looking at page 58, again, that's the slide where you testified that was the last prescription, based on your records?
A. Yes.
Q. And you have no evidence that Ms. Carver even took that dose, right?

A. No. But I would assume chronic pain patients are taking their medicine if they're in chronic pain.
Q. But you don't know whether she filled it or if she filled it she took -- she was able to take the drugs, do you?
A. No.
Q. There was no pill count at the death scene, right?
A. No.
Q. So you have no way of knowing --
A. Correct.
Q. -- if she took that prescription?
A. Correct.
Q. Page 59. You noticed some key changes in the prescription. Do you remember?
A. Yes.
Q. I'll give you a moment to drink some water. I know you were getting ready to.
A. No, I was flipping pages simultaneously.
Q. Well, let's look at the last statement there where it says: Still receiving 90 milligrams of oxycodone per day.
A. Correct.
Q. Isn't that inaccurate?
A. I don't believe so, but how is that --
Q. Well --
MS. CROSS: Your Honor, if I may have permission to show the witness Government's Exhibit 32d.

THE COURT: You may.

MS. CROSS: Pages 48 and 53.

Q. Doctor Policastro, I am going to show you pages 48 and 53, and if you would take a look at them.

And if you would, tell us if they are the December '03 and January '04 prescriptions for Mary Carver for oxycodone.

A. Correct.

Q. And what does it indicate in December of '03?

A. She was taking 15 milligrams four times a day.

Q. And how many milligrams is that?

A. 60 milligrams.

Q. 60 milligrams. And then what was the prescription in January, the next month, '03?

A. 60 milligrams.

THE COURT REPORTER: Excuse me. I don't know if you're saying 16 or 60.

THE WITNESS: Sixty, six zero.

A. That's inaccurate, correct. It was my error.

Q. So she wasn't taking 90 milligrams of oxycodone per day still, she was actually -- it was less.

A. Yes, ma'am.

Q. Looking at page 60 of the Power Point, again, I believe you testified -- this is page 60 of the autopsy, top of the autopsy report. And you discussed yesterday some physical findings, right?

A. Yes, ma'am.
Q. And you said those physical findings were consistent with drug-induced death?
A. Yes, ma'am.
Q. But I ask you this again: Isn't it true that those physical findings are consistent with not just drug-induced deaths but also other deaths?
A. Yes, ma'am.
Q. Now, it could be consistent with congestive heart failure, right?
A. Yes.
Q. And as we look at page 62 of the Power Point, you considered whether it was a possibility of a heart death, right?
A. Yes.
Q. But the autopsy report indicated that the liver, her liver and spleen, were severely enlarged, correct?
A. Correct.
Q. But we don't see that as physical findings on the Power Point, right?
A. Correct.
Q. And a liver and spleen being severely enlarged is indicative of congestive heart failure, right?
A. It could also be indicative of hepatitis.
Q. Other things?

A. Correct.
Q. Going to page 61, the toxicology report. Again, we're here at the toxicology report and the sample site is unknown?
A. Correct.
Q. Turning your attention to James Estep, pages 63 to 68. Do you remember reviewing records for this patient, Doctor?
A. Yes, ma'am.
Q. And on page 64, we note when you testified that Mr. Estep had been treated by Doctor Volkman from September '03 to February of '04, right?
A. Correct.
Q. And then he died one day after his last office visit?
A. Correct.
Q. Right?
A. Correct.
Q. But looking on page 65, when you reviewed your sources of information, we don't see a toxicology report, right?
A. Correct.
Q. Because you didn't review one?
A. Correct.
Q. And we do not see an autopsy report?
A. Correct.
Q. Because you didn't review one?
A. Correct.
Q. Looking at page 66, this is the prescription history for

Mr. Estep?
A. Correct.
Q. And we can see for ourselves that he was on the same types of medication his entire treatment by Doctor Volkman, right?
A. Correct.
Q. But, Doctor, looking at November 2003, that's when he was receiving the highest dosages of medication, correct?
A. Correct.
Q. And that's when? When was that?
A. You just noted, November.
Q. November 2003?
A. Correct.
Q. Well, he didn't die until February 2004?
A. Correct.
Q. So it's your expert opinion that he died because of these drugs?
A. He had a change in the doses prior to his death, one day before his death. Could the drug interactions that existed produce his death? Yes.
Q. So why not -- why didn't he die in November '03 when there was a change in the prescription from October to November?
A. Well, in November of '03, he was on eight times a day of Norco, which is hydrocodone, he was on Soma and Xanax.
In -- let me make sure on the first several pages here, I apologize. Let me just -- on Mr. Estep, correct?

Q. Yes. Yes, sir.
A. So in November of '03 he was on eight times a day of Norco, Soma and Xanax.
Q. Which was the highest milligrams, right, of the entire treatment by Doctor Volkman, right?
A. He had two prescriptions in November for that time, correct, of oxycodone, of 30-milligram tablets.
Q. And so as we look at this slide on page 66, he's taking the most medications in milligrams in pills in November of '03, right?
A. But with the least frequent intervals. The intervals change.
Q. Looking at page 67, this was the last prescription that you noted was prescribed by Doctor Volkman?
A. Yes.
Q. And that was on February 10th, '04, right?
A. Yes.
Q. Again, you have no evidence that this patient took that prescription, correct?
A. Correct.
Q. No pill count at the time of death?
A. Correct.
Q. And then, if you wouldn't mind turning to page 68, you notice some key changes in the prescription, correct?
A. Correct.

Q. And you noted that there was an increase in Soma between December '03 and February '03 or '04, right?
A. Correct.
Q. Isn't that inaccurate?
MS. CROSS: Your Honor, if I may approach the witness with Government's Exhibit 42d, page 70 and 227.
THE COURT: You may.
A. December of '03, he was on Soma three times a day. In February '04, he's on Soma four times a day.
Q. I am going to show you those prescriptions for Mr. Estep. What do they indicate in December 2003?
A. Four times a day.
Q. Soma four times a day?
A. Correct.
Q. And what about in February 2004?
A. Four times a day.
Q. So this slide is inaccurate?
A. Yes, ma'am.
Q. Sir, if I can turn your attention to a patient that you reviewed or the records that you reviewed for Kristi Jo Ross, pages 69 to 77.
This again was a patient treated by Doctor Volkman?
A. Yes, ma'am.
Q. And we can see from page 70 that she was treated from April 17th, '03 to March 8th, '04?

A. Correct.
Q. And she died one day after her last visit with Doctor Volkman?
A. Correct.
Q. Looking at slide 71, you reviewed a number of sources, but you did not review an autopsy report, correct?
A. Correct.
Q. Because no autopsy was performed in this case, right?
A. Correct.
Q. Looking at page 74, you testified about the prescription history for Ms. Ross, and we can see -- is this accurate?
A. Yes.
Q. And we can see that from August '03 to March '04 she's on the same kinds of medication, right?
A. Correct.
Q. And for at least one, two, three, four, five of the months she was on the same dosage schedule, right?
A. Correct.
Q. And then there was a slight increase and she was on that same dose schedule for two months, right?
A. Correct.
Q. Looking at page 75, this is the last prescription from Doctor Volkman, that Doctor Volkman prescribed. You have no evidence that she took this prescription, correct?
A. Correct.

Q. Page 77, you reported the results of the toxicology, your analysis -- your review of the toxicology report. And in looking at the oxycodone levels, we know that the sample site is what?
A. Vitreous.
Q. I'm sorry?
A. Vitreous.
Q. And, sir, is that the glassy fluid behind the eye?
A. Yes.
Q. Okay. And we know that vitreous levels don't reflect blood levels, right?
A. Vitreous levels are different from femoral levels. There is some evidence to suggest a correlation from the data. There may be a wide range. So is it definitively equal or different? No. There is some correlation, but yes, they are different.
Q. They are different, right? And irrespective of vitreous level being different from blood concentration level, we know that oxycodone undergoes postmortem redistribution?
A. Correct.
Q. Which may lead to a likelihood that the numbers reported are elevated?
A. Correct.
Q. Now, you said that there was no autopsy report?
A. Correct.
Q. Because there was no autopsy performed, correct?

A. Correct.
Q. So with that being the case and no one having actually examined the body, this person could have died from something else?
A. Correct.
Q. Correct?
A. Correct.
Q. You have no idea, because there was no autopsy report, whether or not there was or existed a pulmonary embolism, correct?
A. Correct.
Q. And what is that, for the ladies and gentlemen of the jury?
A. Pulmonary embolism is a clot which travels from somewhere in the body to the lungs to obstruct a segment of the lung.
Q. And that condition or -- pulmonary embolism or embolism is common in obese people, correct?
A. It can be increased, correct. It may or may not be.
Q. And Ms. Ross was an obese person?
A. Correct.
Q. Turning your attention, sir, to Steve Heineman, which is slides 87 to 97, this was a patient of Doctor Volkman's, right?
A. Correct.
Q. And he had been treated by Doctor Volkman for how long?
A. From 4/14/03 to 4/19/05.
Q. Two years?

A. Correct.
Q. And he died one day after his last visit, right?
A. Correct.
Q. Now, on page 90, a few pages after that, you indicate some warning signs, right?
A. Correct.
Q. And those warning signs actually were three years before his death, right?
A. Correct.
Q. And so those warning signs -- is it your testimony that you don't treat someone for pain who has or may have had a psychiatric diagnosis?
A. No, I would treat them.
Q. You would?
A. Yes. Patients should have appropriate pain management.
Q. Regardless of other warning factors, right?
A. It should be taken into account with regards to dosing frequency. I'm not suggesting that patients with psychiatric disorders nor with prior history of drug abuse should not be treated.
Q. Looking at slide 94, and I just want to ask you this. I'm not trying to embarrass you or offend you, I just didn't know if I was so sleepy last night.
Do these numbers add up as to how many pills per day the patient was prescribed on his last visit?

A. I'm not sure if they add up, I would have to look. I'm assuming you'll show me an exhibit.
Q. Well, is this an accurate summary of the last prescription that Doctor Volkman prescribed to Mr. Heineman.
A. Let me review my records, please.
Yeah, I have him, per the last note on 4/19/05, of oxycodone, 15 milligrams, 12 times a day and Xanax, two milligrams.
Q. So he should have been taking -- he was prescribed 16 pills, not 23, correct?
A. Correct.
Q. If the numbers are correct?
A. Correct.
Q. And then on the number of pills per month?
A. Those would be incorrect.
Q. If we add that up, it should be 480, not 570?
A. Correct.
Q. Okay. Now, looking at page 95, you summarized your conclusions about the autopsy report there, correct?
A. Correct.
Q. And you say that the physical findings support drug-induced death?
A. Correct.
Q. Again, you've seen pulmonary congestion and aspirated gastric contents, which is common in all sorts of types of

deaths, correct?
A. Correct.
Q. So it is not just indicative to a drug overdose, right?
A. Nor does it rule it out.
Q. But now -- you may need to refer to your notes.
A. Okay.
Q. The autopsy was remarkable for -- and forgive me if I don't say this right -- periorbital and conjunctival --
A. Hemorrhage. Petechiae.
Q. Petechiae, p-e-t-e-c-h-i-a-e, right?
A. Correct.
Q. And when you see that the autopsy is remarkable for periorbital and conjunctival petechiae, isn't that common in cardiac deaths, not overdoses?
A. Common in people that cough and vomit, too. So it is not necessarily indicative of cardiac. Could it be? Yes. But could people that cough and vomit have petechiae? Yes.
Q. So when you testified that those signs were indicative of drug-induced deaths, you forgot to leave out the petechiae, right?
A. I did not include it on the slide, correct.
Q. And if you had, you would have had to tell the jury that it is also common in cardiac deaths?
A. As you noted, it is common in multiple other conditions also.

Q. But also, we don't see on here the 60 percent obstruction in the left coronary artery, do we?
A. I think that is on the next slide.
Q. Okay.
A. It is on slide 97.
Q. Okay. So we have that, 60 percent, right?
A. Of the left main, correct.
Q. And 70 percent obstruction in the right?
A. Correct.
Q. Okay. And so with the petechiae and the obstruction in the coronary arteries, isn't that also consistent with a cardiac death?
A. When you say cardiac death, what do you mean?
Q. Death related to the heart.
A. Due to what?
Q. I'm asking you.
A. Well, was it --
Q. Can it be a death related to the heart condition?
A. Yes, it could be.
Q. Looking at page 96, we see the reported levels for oxycodone, right?
A. Correct.
Q. And we know that oxycodone undergoes postmortem redistribution, right?
A. Yes.

Q. So those numbers could be inflated?
A. Yes.
Q. Turning to Scottie Lin James, pages 98 to 107. Again, a patient treated by Doctor Volkman, right?
A. Correct.
Q. How long?
A. From 9/3/03 to 9/26/05 with a discharge intervening period.
Q. So we're talking about roughly a two-year period?
A. She was not consistently treated during that period of time.
Q. I understand. Roughly?
A. Correct.
Q. Turning to page 102, you looked at the prescription history, right?
A. Yes.
Q. And this was a prescription that you testified that had been -- you reviewed the records and this was a prescription prescribed by Doctor Volkman, correct?
A. Correct.
Q. In reviewing the records and before giving your analysis, did you know that this patient had been a police informant?
A. I was never aware of that.
Q. And so you were also not aware that on September 16th, '05, when she was acting as a police informant, she got this prescription and turned it over to the police?

A. It was not in the medical records so it was not available to me.
Q. So you had no idea that she didn't fill this prescription?
A. Correct.
Q. So in your analysis, you assumed that she had?
A. Correct.
Q. Looking at page 105, you noted that Ms. James had bronchopneumonia when she died?
A. Correct.
Q. And that affects the respiratory system and breathing, correct?
A. Correct.
Q. And people can die from bronchopneumonia too, right?
A. Correct.
Q. Page 106, you again report the toxicology report and the levels. We see oxycodone, it undergoes postmortem redistribution, correct?
A. Correct.
Q. So levels are likely elevated, right?
A. Correct.
Q. But we also note you testified that there was cocaine in her system?
A. Correct.
Q. And I believe you stated yesterday that you could not say if the level of cocaine was significant or not, right?

A. The interpretation of benzoylecgonine to determine toxicity, which is a metabolite of cocaine, I can't accurately determine at this range. As you noted, the value may be high, it's postmortem redistribution.
Q. So you can't tell if this is significant or not?
A. It is a number. The range is anywhere from .0.8 up to 30 micrograms per ml. There's a large range reported.
Q. Now, cocaine is a stimulant, isn't it?
A. It is.
Q. And when a person takes cocaine or ingests cocaine --
A. Mm-hmm.
Q. -- and it wears off, doesn't it -- isn't there some type of depression or a crash, for lack of a better word, that happens?
A. Correct.
Q. And that crash or depression in the system can cause the breathing to slow down, couldn't it?
A. Could a person, post cocaine intoxication, have enough of a respiratory decline to die? No.
Q. I didn't ask that. I didn't ask that at all.
A. Okay.
Q. My question was: Can the depression that occurs cause your breathing to slow down?
A. In relation to with their intoxication, yes. They would return to a normal breathing pattern. But they would be breathing very rapidly if they're highly intoxicated. So they

would go from rapid to normal. But not depression of normal.
Q. Okay. So they would just go back to their normal breathing after a cocaine high?
A. Yes, unless they were on other substances which would depress it.
Q. That's your expert opinion?
A. Do patients that have cocaine intoxication, after intoxication, return back to their baseline breathing pattern in the absence of other drugs? Yes.
Q. Now, cocaine overdoses can cause cardiac arrhythmia, right?
A. Correct.
Q. And what is cardiac arrhythmia?
A. Abnormal heart rhythms.
Q. And so cocaine could cause that, just like methamphetamines can cause it, right?
A. Correct.
Q. And when you see cocaine overdoses that result in cardiac arrhythmia, that's sudden, isn't it?
A. It is, but that's exceedingly rare.
Q. But it is sudden, right?
A. Yes, and rare.
Q. And you wouldn't see those in the ER, would you, because they die and they don't need to go to the ER, right, they go to the morgue?
A. You're assuming that that's a terminal ventricular

arrhythmia.
Q. I'm just asking --
A. You're asking me do cocaine patients have -- can they have terminal ventricular arrhythmias which result in death? Yes, they can. It is exceedingly rare. The proportionality of patients that are cocaine intoxicated and present with arrhythmias that present with death is very low.
Q. Thank you. But what I asked you was, when that happens, however many times it happens, when it does, you don't see those in the ER, do you?
A. I may if they were transported to the Emergency Department.
Q. But they typically die suddenly, right?
A. They can die suddenly. Not typically. They can die suddenly.
Q. And they go to the ER after they die?
A. Oftentimes people will activate EMS when a patient is found in sudden cardiac arrest.
Q. In looking at Ms. James' file, you can't tell if it was the cocaine or not that caused the death, right?
A. I would say it would be erroneous to make an isolated drug that caused her death. I would not state that the cocaine, by itself, caused her death. Is the presence of the cocaine with the presence of all her other drugs, with the presence of other factors contributing factors towards her death? Yes. You cannot exclude it nor include it as the sole cause, and I

stated that.
Q. Thank you. That's all I was asking you. You can't include it or exclude it as the cause of death in this case, right?
A. Correct.
Q. Bryan Brigner, turning your attention to his file, pages 108 to 115. Looking at page 109, we know that he had been treated by Doctor Volkman, correct?
A. Correct.
Q. How long?
A. The records that I had available said from 7/6/05 to 9/30/05.
Q. So about three months, right?
A. Correct.
Q. And he died a few days later after his last visit with Doctor Volkman?
A. Correct.
Q. Turning your attention to page 112, the autopsy report, you noted the findings, correct?
A. Correct.
Q. But the autopsy report also revealed severely enlarged heart at 485 grams, correct?
A. I believe that was noted in the other slide.
Q. I'm just asking you if that was part of the autopsy report. Is that right?
A. Yes, he had cardiomegaly.

Q. Now, I am going to just ask you to look at slide -- we're looking at slide 112, right? If we can look at slide 113, and now slide 114, and now slide 115.

Where is it noted that he had a severely enlarged heart at 485 grams?

A. It is not listed on the slide. I apologize.

Q. Also in the autopsy report it was indicated that the right coronary artery was 75 percent blocked and the left artery 50 percent blocked?

A. There were two lesions noted, from what I recall, in the right coronary artery. I think the first one was 50 percent and the second one was 75 percent, if I recall. I don't have it in front of me, but is that correct?

Q. But that's not on the slide, right?

A. I wrote it "two severe lesions" there.

Q. You just didn't put --

A. The exact numbers. Because there were two and they were severe, as noted, with the plaque blood that we talked about.

Q. And you consider 70 percent -- 75 percent blockage in one and 50 percent blockage in the other a severe --

A. He had two-vessel coronary disease lesions, correct.

Q. And, again, the autopsy report showed purple plethora of the upper torso and head, right?

A. Correct.

Q. Not on the slide?

A. Correct.
Q. Looking at page 113, you noted the findings of the toxicology report?
A. Correct.
Q. The oxycodone and hydrocodone levels are likely to be elevated due to the postmortem redistribution, right?
A. Correct.
Q. And you indicate the vitreous levels here are within range of -- associated with death or lethal levels, right?
A. That value reported within the ranges, yes, correct.
Q. And may I ask you what studies did you use for the vitreous levels being lethal at reported level?
A. I compared it to the other samples.
Q. What other samples?
A. To the blood sample value.
Q. And we know that the blood sample value and the vitreous level value are not equal, right?
A. The correlation from the literature was 1.17 up to 1.7. So there is a correlative factor. The vitreous samples will be higher than the femoral samples because it takes longer for the drugs to go in and longer to go out.
Can you use that range accurately? Perhaps not.
Q. Perhaps not, right?
A. Correct. But the correlative factor of 1.7 suggests that you can.

Q. Now, looking at slide 114, there were other drugs present in Mr. Brigner's system at death, right?
A. Correct.
Q. And they were -- can you pronounce those for me, please?
A. Which ones? Sertraline and norsertraline, which are antidepressants, the parent drug metabolite haloperidol, which is an antipsychotic.
Q. And did you know that Doctor Volkman did not prescribe those drugs?
A. They were not listed in his prescriptions, correct.
Q. Page 115. Now, when we talked about the two severe RCA lesions you have there with blood in the plaque --
A. Correct.
Q. -- isn't that an acute situation?
A. I noted that, and I believe I spoke to that.
Q. Is that yes?
A. Yes.
Q. Only two more to go. Turning your attention to Ernest Ratcliff, page 116 to 120, he was a patient of Doctor Volkman's, right?
A. Correct.
Q. And he was treated by Doctor Volkman only one day?
A. That is what was reported in the records, correct.
Q. And then he died two days later?
A. Correct.

Q. Looking at your sources on page 118, you did not review an autopsy report, right?
A. Correct.
Q. Because it is not listed?
A. Correct.
Q. Because no autopsy was performed?
A. Correct.
Q. However, you did look at the toxicology report, right?
A. Correct.
Q. And if we can, turn to slide 120.
And, again, you see with the oxycodone and hydrocodone that we have unknown sampling sites?
A. Correct.
Q. And oxycodone and hydrocodone also undergo postmortem redistribution?
A. Correct.
Q. So, once again, the numbers could be inflated?
A. Correct.
Q. But we see that methadone was present, right?
A. Correct.
Q. And I believe I noted yesterday that the presence of methadone is a significant component associated with his death?
A. Correct.
Q. And did you know that methadone was not prescribed by Doctor Volkman?

A. I did. Doesn't make it any less significant in his body, but I noted it.
Q. Now, you say that it doesn't make it any less significant. Methadone in his system is significant because it has a greater likelihood of producing sudden death?
A. Correct.
Q. Correct?
A. Absolutely.
Q. And, finally, looking at Mark Reeder, Mr. Reeder's slide numbers are 121 to 127.
He was treated by Doctor Volkman, right?
A. Correct.
Q. For almost a month?
A. Correct.
Q. From September 28th, '05 to October 25th, '05?
A. Correct.
Q. And then he died 23 -- or approximately 23 days later after his last visit?
A. Correct.
Q. And looking at page 123, we note there the sources of your information?
A. Correct.
Q. But it just says autopsy. There was no autopsy report, was there?
A. (No response.)

Q. It's just a summary?
A. Correct. But --
Q. And the summary revealed a weight of Mr. Reeder of 456 pounds, right?
A. Correct.
Q. And he also had a massively enlarged heart, weighing 590 grams?
A. Correct.
Q. It also indicated that there was 65 percent blockage -- if we can turn to Number 127 -- of the left anterior artery, coronary artery, correct?
A. Correct.
Q. But we also on the slide don't see anything about the bladder containing 100 CCs of urine, do we?
A. No.
Q. But that was the case, right?
A. If you note it, yes.
Q. And when you put all of those things together, his weight, the enlarged heart, the blockage in the coronary arteries and the amount found in his urine, that could be indicative of cardiovascular disease, right?
A. It could be, correct.
MS. CROSS: Your Honor, may I have a moment?
THE COURT: You may.
Q. Just going back to Scottie Lin James, on page 106, I may

have forgotten this. On the tox report, we did -- you did testify that the sample site was the vitreous, right?
A. Correct, as well as blood.
Q. As well as blood. And they were, in your estimate, associated with levels of fatality, right?
A. They were reported within the range there. The values could be elevated. They could be --
Q. Elevated due to postmortem redistribution?
A. Correct. And the vitreous sample lags behind the femoral sample or other blood samples.
Q. Thank you, sir.
MS. CROSS: No further questions, Your Honor.
THE WITNESS: Thank you.
THE COURT: Redirect?
MR. WRIGHT: Yes, Your Honor.

REDIRECT EXAMINATION

BY MR. WRIGHT:
Q. Doctor Policastro, I am going to ask you about some questions regarding your qualifications and then talk a little about sources, some of the principles, and then finally discuss some of the patients. And I imagine somewhere in there we may take a break.
In terms of your qualifications, what are you a specialist in?
A. I'm a specialist in emergency medicine and medical

toxicology.
Q. And what kind of toxicologist are you?
A. I'm a clinical toxicologist. I take care of patients with drug and poisoning overdoses.
Q. How is that different from, say, a forensic toxicologist?
A. A forensic toxicologist is a Ph.D chemist who performs laboratory analyses. There is no board certification for a clinical toxicologist in forensic toxicology.
Q. But you are a board-certified toxicologist; is that right?
A. Correct.
Q. So a forensic toxicologist doesn't treat patients?
A. Correct.
Q. Is there a similar kind of training that both of you would undergo?
A. An analytical chemist would be primarily exactly that. Their expertise is in sample analysis. So, meaning when they take blood or urine or vitreous samples, they run it in a machine, they perform equality analysis of that machine, they determine can a sample site be used, and then they report that range.
Q. As a clinical toxicologist, do you have a specialty in determining the effect of drugs on living humans?
A. Yes.
Q. Now, how does that compare to a pathologist?
A. A pathologist is a physician who does a residency in

pathology, which means that they are looking at tissue sample analysis. They may or may not perform autopsies on a regular basis. They -- the job of a pathologist is to evaluate tissue to determine is a disease present or not. Pathologists also oversee laboratory chemistry, too, meaning that are the samples run in the appropriate manner, were the diagnostic tests performed.

So, for example, if you're in the hospital and you have surgery, a pathologist will look at that specimen.

Q. Now, when you treat an overdose patient in the ER, and that -- I assume you have had instances where someone has died of an overdose; is that right?

A. Correct.

Q. How are you able to make that conclusion without reading the autopsy report, the toxicology report, talking to the pathologist? How do you know that someone died of an overdose?

A. So if there's a clinical history with regards to that, was there predeath evaluation with regards to did they present with fluid in their lungs? If we're talking about opiates specifically, you know, do they have abnormal heart rhythms? For example, each poison has specific characteristics. And a clinical toxidrome or collection of physical findings can be associated with specific poisons, per se.

Q. In the ER, have you treated individuals who are chronic pain patients?

A. Yes.
Q. Have you treated people who receive oxycodone?
A. Yes.
Q. Before they walk in the door?
A. Correct.
Q. How about hydrocodone, Xanax, Valium, Soma? Do you treat individuals who have received those drugs?
A. Those would be probably the most frequent medications that I see.
Q. Including Soma?
A. Soma is not frequent, but I have seen patients on Soma.
Q. And for those patients, have you made decisions about what drugs you should or shouldn't prescribe to deal with whatever pain condition they might be dealing with?
A. Yes.
Q. And do you take into account the effects of opiates and sedatives together when you make that kind of decision?
A. Yes.
Q. You were asked questions about how -- about whether any combination of opiates and sedatives will always lead to death. And you explained that it wouldn't.
And I wanted to ask you what about the individuals' files that you reviewed in this case led you to conclude, as we talked about yesterday, that they did die of a drug-induced overdose?

A. So the most frequent findings that were important with regards to this is not necessarily just the drugs themselves and their actions together. But when you see changes in the frequency of dosing, not just the milligram dosages and acceleration over time, but what was noted in these findings was is that a change occurred with regards to dosing frequency, which is more frequent than the amount of time it takes for the drug to get out of your system.

When that occurs, you have an unexpected finding with regards to -- you cannot accurately predict when this will occur as far as peek blood levels, as far as the peek effect of that drug.

And that's where the significant dangers are with regards to prescribing multiple, multiple agents simultaneously in very short intervals.

Q. Now, I am going to ask you about the schedule that Mr. Parsons received in May of 2004. If you could just explain that interaction and what is going on inside his body at that time. So here is that schedule again. How does that illustrate what you just explained?

A. Basically, drugs are coming in all the time. I mean, if you think of this as a jammed-up expressway, pills are coming in all the time. And drugs coming in, drugs coming in, drugs are coming in. Drugs aren't leaving at the same time. So drugs are coming in, drugs are coming in before they've had

time for complete effect.

And so you can't accurately predict when is this person going to have the peek effect and are they going to have an unexpected adverse effect during that time. That dramatically compounds their risk.

Q. And what kinds of adverse affects are you concerned about when that kind of chaos is going on inside the body?

A. Stop breathing.

Q. How is this related to the term that you were asked about, qualitative synergistic effect?

A. So when I used that term, what does that mean? So qualitative just means the drug proper. Quantitative is a number. So it is not so much is there a blood number with it. These drugs interact. There is no ifs, ands, or buts. They interact. When you look at the common findings of patients that have had drug overdose deaths, the most common combination with regards to when these patients have had opiates is a combination sedative with it. They act in the same way to depress your breathing.

Can you have tolerance with regards to that initially? Yes. But as you continue to accelerate the dosing, there is an increase in likelihood of an interval change, which will increase your likelihood of an adverse event.

Q. Now, what is synergistic about it?

A. Synergistic means combined together. And it is not just

additive, as we talked about. It is beyond multiplied. Okay? You can't predict it accurately. So it's not from -- the kinetics no longer apply with regards to that. This is where dynamics occur, meaning that the interaction of these drugs together is not a quantifiable number.

Q. You said it is not additive, but synergistic. What's that distinction?

A. So additive is exactly that. So I take one, I add one, that makes two. This is not that case. These drugs combine in a way that both act in the same manner. They have different functions from pain and things like that. But they both produce central respiratory depression. So --

Q. Now, I mean, how well established is that process that you just described?

A. It is very well established. Do drugs that have similar actions that work together, can they produce adverse affects? Yes.

Q. Now, is this something that is taught in medical school?

A. Yes.

Q. Is this something that is taught, you know, to someone in a fellowship in toxicology?

A. Correct.

Q. Is this something that is taught to someone in a pharmacology program?

A. Yes.

Q. Is there any dispute about -- I'll withdraw that.

MR. WRIGHT: Your Honor, I note the hour. If you wanted to take a break now, it would be about a good time.

THE COURT: All right, Mr. Wright.

Ladies and gentlemen, let's take the midmorning break for the next 15 minutes. And all of the usual cautions apply.

We'll see you back in 15 minutes, roughly 10:45.

THE COURTROOM DEPUTY: All rise.

(The jury left the courtroom at 10:32 a.m.)

THE COURT: Doctor, you can step down.

THE WITNESS: Thank you, ma'am.

THE COURT: See you back in 15 minutes.

THE WITNESS: Yes, ma'am.

THE COURT: No discussion, don't review your testimony with anyone.

THE WITNESS: Yes, ma'am.

THE COURT: Counsels, anything that you would like to put on the record in the absence of the jury before we take a break?

MR. WRIGHT: Your Honor, the only thing I have is a small housekeeping matter. I realize that presentation has not been labeled. We wouldn't be seeking to enter it in evidence, but we wanted to perhaps label that as Government's Exhibit Number 100 and provide copies to the Court.

THE COURT: Okay. That would be great. Thank you.

MR. WRIGHT: It's 101, my apologies.
THE COURT: Okay. And Ms. Brown will put it in the record, but it will not be admitted as an exhibit.
Ms. Cross, anything you would like to say for the record?
MS. CROSS: No, ma'am.
THE COURT: Okay. See you back in 15 minutes.
THE COURTROOM DEPUTY: All rise.
(A recess was taken at 10:34 a.m.)
(The jury entered the courtroom at 10:54 a.m.)
(Doctor Policastro resumed the witness stand.)
THE COURT: You may continue, Mr. Wright.

REDIRECT EXAMINATION (Cont'd)

BY MR. WRIGHT:
Q. Doctor Policastro, we talked about -- we talked on cross-examination about whether or not individuals with certain risk factors would receive pain medication.
Do you remember that?
A. Yes.
Q. And you testified that it would not exclude them from receiving any kind of pain medication; is that right?
A. Correct.
Q. But how would it change your approach to the pain medications that they receive?
A. So you would require far more judicious utilization of your medication choices, meaning that you would want to consider

using the lowest possible dosages with the lowest possible frequency with the least likely to have other drug interactions.

Q. In the 12 individuals that you reviewed, did you see an approach consistent with a low dosage, low drug amount?

A. No.

Q. You were asked some about the idea of tolerance, and I just wanted to understand what an individual could become tolerant to and what they couldn't.

So, what kinds of tolerance, when we talk about pain medications, are important?

A. So, as we mentioned, so tolerance is basically more drug is required to reach the same effect, basic simple principle definition of tolerance. So you become tolerant significantly to the pain effects which require increasing dosages. You are also initially tolerant to the breathing effects. You are never tolerant to the bowel effects.

The issue with the breathing becomes that this is not a mutually end stage, meaning that even though you can never have perhaps 100 percent pain relief, you also never achieve complete respiratory tolerance, meaning that as dosages increase and frequencies change, you increase the likelihood over time when you make significant changes to someone who has already had alteration in that pattern of breathing.

Q. What happens when someone exceeds their tolerance?

A. So, by definition, then, they've exceeded that tolerance. That means that they have breached that level and will have an adverse effect. Or more likely to suffer an adverse effect.
Q. You talked a little bit about a few different sources you used, one of them was Baselt. Could you explain what Baselt is?
A. It is a textbook with drugs listed and concentrations. I looked at it.
Q. Was this the only source you used in calculating the blood levels associated with that?
A. No, it was the least one that I used.
Q. Why so?
A. Because it is just a collection of articles that are older at the time. So, what I did was I looked at what is the most current literature available at the time of my report. So I utilized other sources of literature, because one single utilization of a resource is not an accurate assessment to help evaluate.
Q. And just focusing on Baselt, does the article summarized there regarding blood levels exclude chronic pain patients?
A. Again, because I believe I was told not to look at anything last night, I didn't review and I don't recall specifically what patients were included nor excluded in that. I can't speak to that.
Q. Is there a separate chapter that just deals with chronic

pain patients in Baselt?
A. No.
Q. And in the articles that you reviewed, did they include individuals who were chronic pain patients?
A. The -- it does not specifically state in any of the articles these were chronic pain patients. There was -- in the Spiller article, there was a differentiation between suicide, nonsuicide in patients that were receiving prescriptions.
Q. Did you also review an article that was based on overdoses in the Southeast Ohio, West Virginia, Kentucky area?
A. So one of the articles that I used for evaluation of these drug concentrations was actually in Northeast Ohio. It was in Cuyahoga County, in Cleveland, actually where I trained. And that was by Baker and, I believe, Jenkins. And I can't recall if it was in the Journal of Analytical Toxicology or not. I don't recall specifically.

But basically it evaluated patients that had drug death exposures. And it did not differentiate between acute and chronic patients. It noted patients that had incidental findings of oxycodone or hydrocodone that were not attributed to death in those patients and that were also attributed to death. And typically, what they found was that the concentrations were lower in those patients that had incidental findings and higher in those patients that had death associated with drug death.

Additionally, what's noted in other sources that I utilized was it was felt that oftentimes the concentrations were lower when there were multiple drugs ingested compared to when they were isolated, single cases.

There is an overlap, obviously, that can be attributed. These postmortem redistribution values are noted potentially elevated. So within the medical literature associated with these drug-associated deaths, those were the ranges reported. The numbers are the numbers.

Q. And that's the range that you reported that we had up on the slide and it was per your report?

A. Correct.

Q. Now, the third source I wanted to ask you about was the Tennant blood study. You had an opinion about that study yesterday, if I remember correctly?

A. So, the application of living blood samples to dead samples cannot accurately be performed. We talked about that. The issue being is that the Tennant study was a report in an article or magazine or journal, but it is not indexed. You could not find this in the National Library of Medicine. It was not an indexed journal.

Q. And why is that significant?

A. Indexed journals in the National Library of Medicine, which is PubMed, MEDLINE, et cetera, are considered to be peer reviewed data, which is scientifically validated by peer review

sources.
Q. Now, would you rely on -- or actually before this case, had you ever heard of the Tennant blood study?
A. No.
Q. And how long had you been a toxicologist?
A. I completed my training from -- let's see, I finished residency in 2004. So, I started my fellowship in '6, so I've been in three, four, five years.
Q. And I assume you've been to some conferences during that time regarding toxicology?
A. Correct. As a matter of fact, I continue to do that. And I was one of the course directors for the opioid forensic toxicology course which -- I was course organizer, let me rephrase that specifically, which was a joint meeting between the Society of Forensic toxicology and American College of Medical toxicology.
So what we were engaging in is further discussions between the analytical toxicologists and clinical toxicologists. And this is now a series of meetings that we've done. The first one was ethanol marijuana, is now -- second one is opioids, the third one is methamphetamines.
Q. And the Tennant blood study is not a part of that conversation?
A. They were not noted in any of those conversations.
Q. So explain to me what was wrong or lacking in the Tennant

blood study.
A. So the Tennant blood study, there's several things. So, number one, there was very small sample sizes, which were noted. Number two, these were subjective reports that these pain treating physicians just said here's some numbers from patients that I have. They weren't valid -- I have no idea if they were on other drugs, there was no control for the drugs, they just report a subjective amount of what these patients are taking. Again, we don't know are they taking them or not taking them.

There's a subjective report of patients' functioning. Again, it's a subjective report, not validated, no observation of that. There's no control for other factors during this. These are just subjective reports that were listed.

And then a blood sample was noted. There was no control exactly for was this a steady state, nonsteady state, when were they drawn? They recommended that they be drawn two hours after, but that was not controlled for.

So there's multiple factors that were noted in this. And you see a huge wide range of values reported. Again, it is a number. If you say in living people, can you have very high numbers? Yes.
Q. When you've dealt with an individual who is a chronic pain patient in the ER, you mentioned that when you do see some of these red flags such as heart disease, you might consult with

another physician; is that right?
A. Well, anytime a patient's treating physician sent the patient in or they have an established patient, it is always good practice to confer with their treating physician because, again, what you don't want to do is create drug error, other errors where there's miscommunication, where there's -- in the absence of communication, things can be doubled, tripled, not reported, things like that.
Q. Does that mean you just give them a call? How does that work?
A. It can be a variety of things. I mean, for example, if a patient has coronary disease and chronic chest pain, you know, what is the etiology of what's going on? Are they there for chest pain and evaluated? Just because you have chest pain and coronary disease doesn't mean you're having a myocardial infarction.
Q. You were also asked about a guideline that described increasing the dosage of opiates from 50 to 100 percent during each visit until pain was eliminated. Do you remember that line of questioning?
A. Yes.
Q. Have you ever heard of that guideline as a toxicologist?
A. I'm not familiar with the pain management guideline for an outpatient practice. I don't go to their society meetings, I don't read their specific guidelines. The guidelines that --

with regards to pain management established by the World Health Organization exist, which is an increasing escalating dose of pain medication, starting with nonnarcotic pain medications first, and then to narcotic pain management to include. There is no notation of dosing frequency from other guidelines.

Could there be guidelines out there? Yes. Am I familiar with them? No.

Q. What concerns, if any, would you have regarding an increase of the dosage from 50 to 100 percent each visit?

A. It is just a number. I mean, again, that's not taking into account what is the specific factor of that individual patient. I mean, that's a blanket statement. If you have a patient with, for example, underlying coronary disease, lung disease, kidney failure, and it's a dialysis patient that smokes and is on oxygen, that's not necessarily true for all patients.

So I think whoever the treating physician is that's taking that guideline on, they have to evaluate that and that's just a number.

Q. And would that be a patient specific decision, in your opinion?

A. All drug therapy should be a patient specific decision.

Q. I want to ask you a little bit about the toxicology reports. What role did they play in your conclusions regarding cause of death?

A. So patients that have toxicology reports available, it was

a number. You noted the number. Is it high, is it low, is it there, is it validated, is it not validated. Yes or no. It is there. The number is there.

The bottom line with all of these patients and everything that you saw, when I first evaluated all of this is that there were 15 patients that I evaluated, 12 patients that were discussed here today. All of these patients have some characteristics similar to them.

And the following is that I noted: That, number one, do they have coronary disease, yes or no, which was found on autopsy. Yes.

Do all of these patients have some form of pain that they were being treated? Yes.

Do they have other co-morbid factors? Yes.

The overwhelming thing that we see is that they take the same type of drugs with changes in frequencies and changes in dosages. And oftentimes what we saw was that not only did they receive the same type of medications, but right prior to death you see an acute change in either dosing frequency or dosage proper. Were there several mitigating factors per individual patient? Yes.

But the global evaluation of this is that you have two types of medications that were used, acting in the same type of manner that can produce harm. When you change the frequency of dosing to the point where it is more frequent than the

half-life of the drugs, you can't accurately predict how these drugs interact. That dramatically increases your risk for an adverse effect.

In the end, did each of these patients die? Yes. Were there co-morbid factors? Yes. Did they also have in common the fact that they all take the medicine that is known to interact and can produce respiratory depression death? Yes.

Q. Did you take postmortem redistribution into account?

A. Yes.

Q. Did you take sample site into account?

A. Yes.

Q. So why, then, did you review toxicology reports at all?

A. Because they're there. I was looking, do they have the presence of those drugs, were there other drugs present? Which are very important. For example, in the cases that we noted, there was methadone present, there was cocaine present. Those are contributing factors. It would be erroneous to just say -- to not consider their value.

Q. Now, you were asked about whether or not you went and got the technician notes relating to the toxicology reports. And I believe you testified that you did not; is that right?

A. Correct.

Q. When you receive a toxicology report or a blood level when you are in the ER, do you automatically go and find the technician's notes?

A. No.
Q. And why is that?
A. I assume that the reported value is the reported value. Could there be sample error? Yes. But the reported value is the reported value. I don't question its authenticity every time I treat a patient.
Q. Okay. I wanted to start asking you about some of the specific patients, and we're not going to redo the presentation. Don't worry about that.
A. I was hoping to do all of that again.
Q. You are the only one, I think.
Okay. The first individual that I wanted to ask you about was Mr. Gillespie. And you were asked about whether or not you could tell if Mr. Gillespie took any of the medications he was prescribed.
I just wanted to ask you if oxycodone showed up on a toxicology report?
A. Yes.
Q. And was oxycodone prescribed by Doctor Volkman?
A. Yes.
Q. You were also asked about an entry on the autopsy report that talked about a purple plethora of the head and the neck.
A. Correct.
Q. What is that?
A. Basically, that means from here to the head you're purple.

You're swollen and purple.
Q. Does that mean that someone died of a heart attack?
A. It doesn't exclude it nor include it. It just means that after death they were purple laying flat.
Q. Is that something that you would commonly see in someone who had died?
A. Patients that present in cardiac arrest are blue and purple when they come in.
Q. What other conditions would cause that?
A. Well, any type of death could be associated with it. If they had drug death also, they could be blue and purple.
Q. You also explained a little bit about when a patient is on oxygen or they're intubated and you were asked about how, if someone is receiving oxygen, they could suffer from a respiratory death. And I wanted to just walk me through how, if you're receiving oxygen, you could still die in the way that you described.
A. Well, what we were talking about was oxygen abnormalities within the lungs.
I mean, with regards to the patient that we talked about, I believe it was Mr. Gillespie; is that correct?
Q. Yes, we're still on him, yes.
A. Sorry, there's a few patients there. So Mr. Gillespie, I have no idea if he was intubated at the time of finding him on the scene. There's no notation. So did he suffer a

respiratory arrest and was intubated there? Did he have ill -- basically, such severe disease of his lungs at that point in time as a result of fluid, pneumonia, lung injury, et cetera, to the point that he could no longer be oxygenated and the efforts were terminated?

Oftentimes, during this, even though patients that are receiving oxygen therapy, they still can have circulatory compromise, the blood pressure is low as a result of the initial injury, their brain is injured as a result of lack of oxygen, you can't keep their blood pressure up. So even though you have -- you're supplying oxygen, it doesn't mean that it is being appropriately distributed.

Patients that have lung injury from pneumonia, influenza, which can create pneumonia, drug overdose death, vomiting into your lungs, just because you're giving them oxygen doesn't mean they're receiving oxygen adequately.

Q. You were also asked about the effect of bronchopneumonia and Mr. Gillespie's death. Is that something that would typically cause death?

A. It may or may not. I mean, there are lots of people walking around with pneumonia. So just because you have pneumonia doesn't mean you're going to die of it. Can you die of pneumonia? Yes.

Q. And pneumonia would be something that, if you visited a doctor within say two days, that doctor might have noticed at

the time?
A. Correct. The other point, too, is that if you vomit into your lungs, that creates a chemical injury and that can produce bronchopneumonia. So just because you have a presence of a particulate matter in your lungs or air space disease at that time, that may or may not necessarily reflect an acute or subacute event.
Q. Now, you were also asked about the source of morphine that was found in Mr. Gillespie's blood. And it sounded like it could have been administered by the hospital, could have been coming from shooting up heroin. That source is unclear; is that right?
A. Correct.
Q. I wanted to just have you walk through the effect of taking morphine if someone is also before you and taking morphine, receiving oxycodone, for example. What is that morphine being added into the system going to do?
A. It dramatically increases their risk for a respiratory decline. Even if they're intubated or not, the point being that they may not be able to participate in oxygenation at that time, as well as ventilation. I mean, this is typically what I see in patients that overdose clinically.
If we use heroin as an example, again, heroin is just a very potent form of an opiate, which is broken down into morphine. So why do heroin addicts die? Well, because of

exactly this. They have increasing dosing frequency, they may -- even if patients are chronically on heroin, they may have tolerance to that. They shoot up another dose of that or have some other additional opiate there and they die.

So it doesn't surprise me if the patient is shooting heroin or has additional opiates present that they would have a respiratory decline.

Q. And does the oxycodone help or hurt in the body's ability to withstand the effects of morphine?

A. It does not help.

Q. Next up was Charles Jordan. And I wanted to first ask you about the prescription history that we see here, especially the difference between September 2003 and October 2003. And I am going to move to the slide that discusses the increase in the daily dose of oxycodone.

What was the percentage increase between the month before and Mr. Jordan's last visit?

A. I'm sorry, percent increase?

Q. Yes. So 120 to 180, would that be a 50 percent increase?

A. I can't do the math off the top of my head. It is a percent increase, I guess 60 of 180, whatever percent that is off the top of my head.

Q. And that's oxycodone; is that right?

A. Correct.

Q. I wanted to ask you, too, looking at the toxicology report,

was oxycodone found in Mr. Jordan's blood?
A. Yes.
Q. Now, why doesn't it -- and oxycodone was prescribed by Doctor Volkman?
A. Correct.
Q. Why doesn't it matter if it is 1.9 or 1.1 or .6 to urinalysis?
A. I mean, the drug is present. I mean, if you look at his prescription histories and things like that, on the 9/16/03 to 10/16/03 to evaluating this, he has a change in his dosages. Right prior to his death, there's an acute change in his dosages. You can argue the validity of what these numbers are. And, again, as we've seen in the medical literature, the medical literature is the medical literature. Postmortem data is there.

There are values reported. Can they be argued on the validity of what these numbers mean after death? The drugs are present. Was the change in the drugs present? Can the drug interact in such a manner as to produce death? Yes.
Q. And why is it that marginal change that matters?
A. Because, again, we talk about that safety index of these drugs. I mean, even if you're on these drugs for a long time, you make an acute change, it doesn't mean that you have a forever level of tolerance. You make a change, that change exists. Does that increase the safety in index when making

acute changes on top of it? Yes.
Q. Speaking of changes, let's move to Mr. Coffee. And I wanted to ask you about the change that you noted occurred in his dosage of oxycodone.
What kind of change did you see in the months leading up to Mr. Coffee's death?
MS. CROSS: Your Honor, I am going to object. May we approach?
THE COURT: You may.
(The following transpired at a sidebar conference.)
MS. CROSS: Your Honor, I know that Mr. Wright, that the government, that they're entitled to redirect. But this sounds like, I'm beginning to feel like, a rehashing of the direct examination, and we would object to that extent.
MR. WRIGHT: The reason I'm asking these questions are the 50 to 100 percent guideline that he was asked about in cross. And these are situations where there was a 50 to 100 percent increase resulting in death. That's why I'm asking. I'm not trying to rehash the direct.
MS. CROSS: But he also said that he didn't know about those numbers or that information whatsoever. So why we're rehashing when he says he doesn't know anything about that information seems to be a rehashing of the direct examination.
THE COURT: I'm inclined to agree with Ms. Cross. If your point is that Doctor Volkman increased the dosage far more

than that, triple, quadruple, that might be a point well taken.
But just to rehash on a subject that he denied any knowledge of, I think is not very productive and probably redundant.
MR. WRIGHT: Okay. I'm not clear how he did not acknowledge. He testified about the increases on direct and he was asked about them on cross. I'll tighten it up. I understand the concern.
THE COURT: Well, I think Ms. Cross said isn't that typical or something in one of the studies, and he said he never heard of that.
MS. CROSS: That's right.
MR. WRIGHT: Okay. I see your point. That's fine. I'll tighten it up.
THE COURT: Okay.
(Ends sidebar conference.)
BY MR. WRIGHT:
Q. Doctor Policastro, what kind of increase do you see from August to October in the daily dosages of oxycodone for Mr. Coffee?
A. I see an increase in the milligram amount.
Q. Right. But how much is that increase?
A. So now all of a sudden, I'm a mathematician here. Eighty from August to October, and then 60 milligrams from October to November. Is that correct? I can do biochemistry but not math

all of a sudden here, so.
Q. I wanted to ask you next about Ms. Carver. Were oxycodone and hydrocodone prescribed by Doctor Volkman?
A. Yes.
Q. Did they show up in her toxicology report?
A. Yes.
Q. You mentioned that in the autopsy that there was a number of physical conditions that was consistent with any kind of cause of death.
Do you remember that?
A. Correct.
Q. Why then did you conclude that Ms. Carver died of a drug-induced death?
A. So what, again, we see sort of globally with these patients, and I would have to simply review Ms. Carver, is that each of these patients -- 91 percent of these patients had a change occur prior to their death. And that change in prescriptions occurs right before.
Are the drugs present? Yes. Is there also toxidrome present with fluid in your lungs which can also be consistent with drug death? Yes.
Q. Next up was Mr. Estep. And you were asked a number of questions focusing on the difference between the prescriptions that she received -- or he received in 2003, December 2003 and February of 2004.

What's the effect if someone is not taking medication in 2004 and then receives medication in February of 2004?
A. Their tolerance may or may not decrease.
Q. Would it be more likely that they would lose tolerance in that month interval?
A. It is possible they could also carry it over. I can't speak specifically on that. I can tell you that patients, for example, that are incarcerated and go to start their -- oftentimes may be incarcerated for a short or long interval and if they start -- and I'll use recreational drug as an example because that's typically where we'll see that, will be those patients that start the same level of drugs before, they come in with respiratory arrest, typically, with regards to opiates. And that can also be with regards to pills, if they start their chronic pain medication from where they were before. The level of tolerance would be difficult to accurately predict, are they complete, partial or above.
Q. But what is it about those individuals who have used drugs, spent some time in jail, come back and used drugs that is significant in your mind?
A. Because the body wasn't undergoing metabolism of those drugs and they did not receive a continuous dosing of those drugs. So the adaptive response of the cells to that is less.
Q. Next up was Kristi Ross. And you were asked some questions about dosage ranges during cross-examination and recommended

doses. And I wanted to see if you thought that the oxycodone, 5 milligrams up to 20 times per day, would fit within a recommended dose?
A. It makes no clinical sense to me. I'm not negating that there shouldn't be pain medication use. But as we talked about, where the risk of harm occurs is when you start exceeding the dosing intervals more frequent that the half-life of the drugs. You have unpredictable patterns of absorption, unpredictable peek plasma concentrations, you have unpredictable excretion of these drugs. So therefore, the predictable effects of these are no longer valid.
Q. Next person I wanted to ask you about was Dwight Parsons. First thing was -- yeah, there was an error here I think on 79 just regarding the period of treatment from Doctor Volkman. What does that chart show was the period?
A. From April of '03 to August of '04.
Q. Okay. And then just to go back. This is one that I hadn't caught. On page 79, it looks like his first visit with Mr. Parson was earlier in 2003, is that right, just to be fair?
A. Correct, if it was listed.
Q. Now, you were also asked about whether or not the dosage that he received in April of 2003 was the same as the dosage he received in -- I think it was April of 2004, was the period that we asked about -- or May 2004, I'm sorry.
Looking at that chart, was the dosage the same?

A. I'm sorry. April of --
Q. '03?
A. '03.
Q. And May of '04.
A. Was the dosage the same of all of his drugs?
Q. Of any of them.
A. No.
Q. You were also asked about whether or not the pharmacy filled the Soma or Xanax prescription that Mr. Parsons received on his last visit with Doctor Volkman.
Do you remember that?
A. Yes.
Q. What was it that increased, though, in his last visit with Mr. Parsons? Was it the Soma or the Xanax?
A. No.
Q. What was it?
A. His oxycodone.
Q. And just as an example -- let's keep going ahead to Steve Heineman. Now, you were asked about how long Mr. Heineman treated with Doctor Volkman, and that range there on page 88 is about two years; is that right?
A. Correct.
Q. What gaps existed in that treatment period?
A. There were several gaps, as noted here on the slide. There were multiple months where he was no longer either receiving

prescriptions, did not show up for his appointments. I don't know if they were scheduled or not. There's treatment gaps.
Q. How would that change the dosages that someone would receive, if they are gone two months, back, gone three months, back?
A. Again, I mean, so you cannot assume that they maintain tolerance, nor can you accurately state that their tolerance is gone.

You would not necessarily increase a dosing period of immediately following a large gap.
Q. And you were asked some about the history that was in the medical file regarding Mr. Heineman's drug overdoses, substance abuse history, psychiatric admissions.

How would those change what you would prescribe to an individual?
A. So, particularly in Mr. Heineman's situation, giving large quantities of drugs would be a significant increase in concern because of his prior history of drug overdoses, because he's bipolar. And the reason being that, in several of the medical records, he fled multiple states. I mean, he was in one state, went to another state for another treatment, went to another state for another treatment.

So, you have erratic movements and erratic behavior. He has had other drug overdoses in the past. So supplying multiple agents in high quantities increases the likelihood

that he could have an overdose.
Q. And would you prescribe an individual with that profile Marinol and Demerol?
A. I never prescribe Demerol, period. Marinol, I only have utilized in patients with advanced cancer or patients with HIV/AIDS, who have had severe cachexia, or weight loss, that are unable to tolerate their medications. And that's initially what it was primarily prescribed for.
Could it be used for other sources? But that's not the first agent I would use for treating somebody with nausea and vomiting.
Q. You were asked about some things that weren't on this slide regarding the autopsy report; is that right? Do you remember that?
A. I may have.
Q. Okay.
A. I was asked a lot of things.
Q. Did you review the full autopsy report for Mr. Heineman?
A. Yes.
Q. And I assume there were some things on there that you decided weren't relevant to whether or not it was a drug-induced death or whether it was a heart death, is that right?
MS. CROSS: Objection to the form of the question.
THE COURT: I'll sustain the objection. You can

rephrase. You can rephrase.
Q. Why did you omit certain things from this slide?
A. I didn't think they were relevant at the time.
Q. Did you omit the fact that there were scars on his wrist?
A. It wasn't pertinent to the fact that he did not have acute suicidal ideation and death from cutting himself. So I didn't note also if there were surgical scars from other procedures either.
Q. Or tattoos or anything like that?
A. Some of them were entertaining, but I didn't note them.
Q. Okay. And then in terms of the gaps here, how would it change your approach as a toxicologist and a physician if you knew that Mr. Heineman had been discharged from Tri-State?
A. How would that change my approach?
Q. Yes.
A. So the first thing is validating his pain. I mean he had a significant injury and he had a history of pain related to that. The problem was that a treating pain physician stated that he was completely noncompliant with it. He was not compliant with his dynamic bracing, he did not undergo his postsurgical treatment regiment, he was not wearing his brace. So he also contributed to his own pain at times from not following through with regards to the dynamic bracing that the surgeons had ascribed to him.
The concern is exactly what I mentioned. He has a history

in past medical records of opiate dependency. That doesn't mean that he should not necessarily receive opiates, but prescribing things with multiple acting agents to someone who has had unstable behavior in the past would warrant the judicious use of medicine.

Q. Next was Scottie James. Now, you were asked about this first visit, which was on September 16th, 2005, when Ms. James was acting as an undercover for the police.

Do you remember that line of questioning?

A. Yes.

Q. And then she comes in ten days later on September 26th, 2005; is that right?

A. I believe the first one was not her first visit, though. She was discharged from their service for deception to obtain narcotics.

Q. Now, you're a busy physician. I assume you see a lot of patients?

A. I see a lot of patients, correct.

Q. If someone had faked cancer, would that stick out in your mind?

A. Yes.

Q. If you had seen a patient ten days earlier, would you have remembered that?

A. I remember a lot of my patients that I see. I see -- unfortunately, we see a lot of patients back at times. So --

Q. So in a 10-day period, if you saw somebody in the ER, you would -- you might remember them even though it had been ten days earlier?
A. Correct, as well as there should be a record that they were there.
Q. Now, Ms. James was another individual where the notation of bronchopneumonia was discussed. Can you just explain what bronchopneumonia is?
A. Just basically means fluid and particulate matter and/or consolidation, meaning other thickness within the lungs.
Q. Is it something that's detectable in a regular office visit?
A. It -- well, it may or may not be. You can listen to somebody's lungs and hear crackles. Children hide pneumonia more than adults. But oftentimes there should be physical findings in someone that has bronchopneumonia.
Q. So if you listened to her lungs, most likely it would have been possible to know if this was going on in her body?
A. It heightens the capacity for detection. Also, did they have other clinical symptoms of it: Were they coughing? Did they have productive sputum? Did they have pneumonia? And that's assuming infectious. If she had vomited into her lungs prior to that, she would also have clinical findings of that.
Q. You were asked about someone coming off a cocaine high and what that would do to their respiration. Would you explain

that process again?
A. I see patients with cocaine wash-out a lot. And these patients may or may not be sleeping. Most of the time they have a significant level of depression associated with that, and what we call basically substance-induced mood disorder. They'll often present for psychiatric complaints at that time because they are so clinically depressed and chemically depressed because they changed the levels of chemicals in their brain. So, I can tell you clinically I see a lot of patients with cocaine wash-out.
I've never seen, in the absence of other drug agents, to the point of having severely depressed respiration beyond a normal breathing pattern unless they have other mitigating factors.
Q. And would the fact that someone was receiving opiates be one of those mitigating factors?
A. Yes.
Q. And so if someone was receiving opiates and they came off of a cocaine high, what would happen to their breathing?
A. So they very well could have -- just the opiates, by themselves, have depression respiration. I do not necessarily nor have I clinically seen patients that have had combined cocaine and opiates that have washed out of cocaine by themselves having additional risk factors of just the cocaine proper contributing to a marked depression respiration.

Q. Now, you mentioned the circumstances of a cardiac arrhythmia if someone had died of a cocaine overdose. Could you explain -- you said that that was sudden. I wondered if you could explain more what that was like.

A. So cocaine is an anesthetic. That's what it was first used as. What I mean by that is it blocks cilia. So what creates numbness when you put it in your nose, your mouth, we actually will use cocaine therapeutically in people who have nose bleeds to pack them.

So patients who take cocaine block a certain chemical in their heart, which can increase their likelihood of having abnormal heart rhythms. Additionally, outside of the chemical interaction of cocaine, cocaine squeezes blood vessels down. You may or may not have an abnormal heart rhythm from the lack of blood flow, which triggers an extra abnormal beats or delaying those beats at the bottom of the heart.

Q. So what happens to the heart if someone dies of cocaine overdose?

A. So it depends on exactly what the terminal event is. As I mentioned, cocaine squeezes blood vessels. It makes your chemicals higher, your excitatory chemicals in the body higher. That can trigger abnormal heart rhythms of itself. But when you look at all comers of cocaine patients, those patients that have active cocaine -- I come in, I took a huge quantity of cocaine, oftentimes the patients will take an eight-ball, an

eighth a gram, quarter of a gram. Cocaine rocks are less than a quarter gram. So they will -- may present twenty minutes to three days after that with chest pain.

Of those patients with chest pain, only 6 percent of them have heart attacks. 6 percent. The vast majority of patients that do cocaine don't suffer a terminal event.

Q. Next person I wanted to ask you about was Bryan Brigner. And I think I just have one question. You were asked about an enlarged heart that was noted in the autopsy report. And I wanted to see if you could just explain if that was significant to your conclusion regarding cause of death.

A. When cardiomegaly is present, they may or may not have congestive heart failure. They may have underlying chronic hypertension. Just because you have an enlarged heart doesn't mean that you abnormally squeeze or abnormally relax.

Q. And what happens if you are taking opiates or sedatives to your heart and it is having to work harder?

A. Well, opiates themselves don't directly interact with the heart proper. I mean, they're not going to cause a change in an increase of risk for heart attack death per se.

They may or may not have increasing workloads, depending upon where they are. So, it may or may not have an effect.

Q. And then on Ernest Ratcliff, did you just rely on the toxicology report in making your conclusion regarding his cause of death?

A. No.
Q. Last one, Mark Reeder, he's another one who had an enlarged heart. What does that mean one way or the other to you about the possibility of a heart-induced death?
A. We keep using that word. It -- medically, that's confusing to me. When you say heart death, what do you mean? Meaning did you die of myocardial infarction? Did you have a clot that caused an absence of blood flow which caused death? Do you mean abnormal heart rhythms? There's a variety of things, when someone presents with heart death. You see clinically, someone comes in and is having a heart event, you have to break it into is it a rhythm problem, is it a vascular problem, is it a circulatory collapse from abnormal blood pressure? There's a variety of things when you say heart death.
Q. In the situation for Mr. Reeder, did you see any indication that he suffered from myocardial infarct or a heart attack?
A. There was no notation on the autopsy consistent with that.
MR. WRIGHT: Could I have a moment, Your Honor?
THE COURT: You may.
MR. WRIGHT: Nothing further, Your Honor.
THE COURT: All right.

RECROSS-EXAMINATION

BY MS. CROSS:
Q. Doctor Policastro, I like speaking with you but I only have one question.

The FDA doesn't prohibit prescribing Soma, oxycodone and Xanax together, do they?

A. No. No, ma'am.

Q. And they don't provide any prohibition, warning signs, again, prescribing those drugs together, do they?

A. No.

MS. CROSS: Thank you.

THE COURT: Counsels, is there any reason for Doctor Policastro to remain available for recall?

MR. WRIGHT: No, Your Honor.

MS. CROSS: No, Your Honor.

THE COURT: Thank you, sir. You may step down and you're excused.

THE WITNESS: Thank you, ma'am.

Thank you, everyone.

(Witness excused.)

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I N D E X

C E R T I F I C A T E

I, Jodie D. Perkins, RMR, CRR, the undersigned, certify that the foregoing is a correct transcript from the record of proceedings in the above-entitled matter.

s/Jodie D. Perkins
Jodie D. Perkins, RMR, CRR
Official Court Reporter